

Title (en)
METHOD OF PRODUCING GRAPHENE BY ELECTROCHEMICAL EROSION OF GRAPHITE ELECTRODES

Title (de)
VERFAHREN ZUR HERSTELLUNG VON GRAPHEN

Title (fr)
PROCÉDÉ DE PRODUCTION DE GRAPHÈNE

Publication
EP 3105176 B1 20200729 (EN)

Application
EP 15702556 A 20150128

Priority
• GB 201402650 A 20140214
• GB 2015050194 W 20150128

Abstract (en)
[origin: GB2523154A] A method of producing graphene sheets comprises the steps of, (a) forming a carbonaceous powder by electrochemical erosion of a graphite electrode 70 in a molten salt 110 comprising hydrogen ions; (b) recovering the resulting carbonaceous powder from the molten salt liquid; and (c) thermally treating the carbonaceous powder by heating the carbonaceous powder in a non-oxidising or reducing atmosphere to produce a thermally treated powder comprising graphene sheets. Preferably, the molten salt comprises lithium chloride, which is in contact with a moist gas during the erosion of the graphite electrode. A method of producing graphene sheets comprises the steps of (a) forming a carbonaceous powder by electrochemical intercalation of a metallic species and a hydrogen species into a graphite electrode in contact with an electrolyte comprising the metallic species and the hydrogen species; (b) recovering the resulting carbonaceous powder from the electrolyte; and (c) thermally treating the carbonaceous powder in a non-oxidising or reducing atmosphere to produce a thermally treated powder comprising graphene sheets.

IPC 8 full level
C01B 32/184 (2017.01); **C01B 32/19** (2017.01); **C25B 1/00** (2006.01); **C25B 9/00** (2006.01); **C25B 11/14** (2006.01)

CPC (source: EP GB US)
C01B 32/184 (2017.07 - EP US); **C01B 32/19** (2017.07 - EP GB US); **C25B 1/00** (2013.01 - EP US); **C25B 9/00** (2013.01 - EP US); **C25B 11/044** (2021.01 - EP US); **B82Y 30/00** (2013.01 - US); **B82Y 40/00** (2013.01 - US); **C01B 2204/32** (2013.01 - US); **Y10S 977/734** (2013.01 - EP US); **Y10S 977/845** (2013.01 - EP US)

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